

Recombinant Proteins for Bioassay:

Cytokines, Chemokines, Growth Factors, and Enzymes



BioLegend is ISO 9001:2008 and ISO 13485:2003 Certified



World-Class Quality | Superior Customer Support | Outstanding Value

BioLegend Recombinant Proteins

BioLegend's growing portfolio of recombinants includes chemokines, interleukins, the TNF superfamily members, growth factors, enzymes, and adhesion molecules.

Why choose BioLegend?

BioLegend offers a wide variety of recombinant proteins for your bioassay needs.

Our recombinant proteins are:

- >95% pure.
- Validated in-house through bioassays to ensure reproducibility and activity.
- Biologically active and compare favorably against competitors' products.
- Endotoxin tested to ensure compatibility with biological systems.
- Stability tested.
- Competitively priced.
- Discounted for bulk orders.

Elevate Your Research with BioLegend Recombinant Proteins

While you may be familiar with many of BioLegend's flow cytometry reagents, you may not be as acquainted with the diverse set of recombinant proteins we develop and manufacture. Our expanding catalog now contains over 420 mouse, rat, and human recombinant proteins.



In vivo **bioassays**



Stringent quality testing against internal and external controls.



In vitro **bioassays**



The customer's voice is our guiding path.



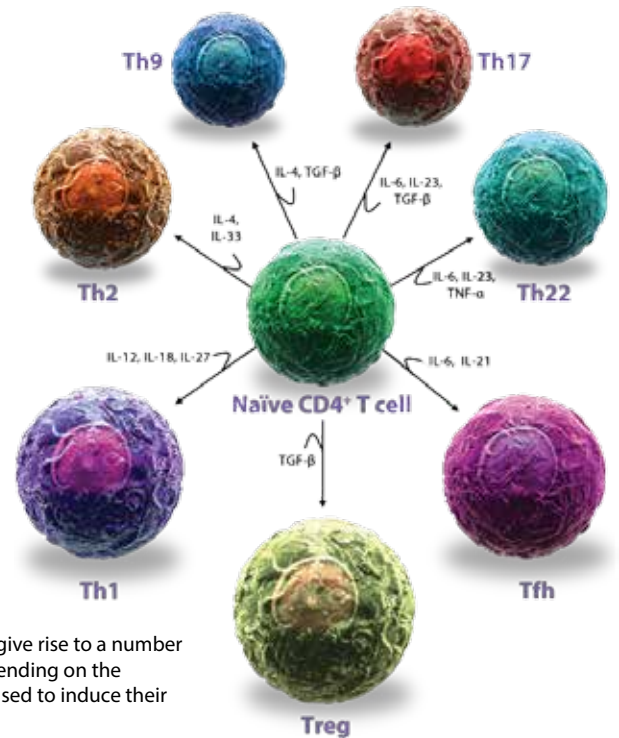
Committed to continuous improvement.



Quality products to help make legendary discoveries.

Interleukins and Interferons

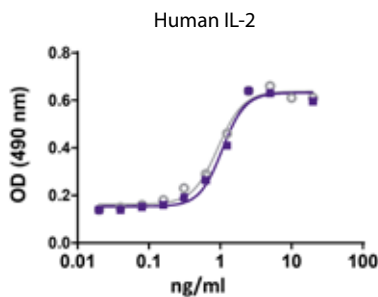
Cytokines, like interleukins, interferons, and growth factors, allow cells to communicate with one another, inducing a wide range of activities. These factors can incite or prevent inflammation, promote cell growth, or bias cells to differentiate to a particular phenotype. Cytokines mediate their function by binding to their respective receptors, initiating signaling cascades for gene transcription.



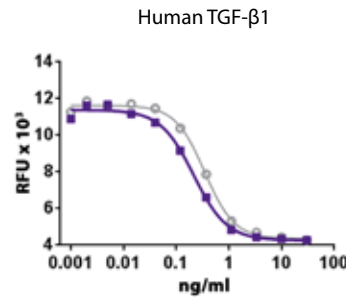
Naïve CD4⁺ T cells can give rise to a number of T helper classes, depending on the recombinant proteins used to induce their differentiation.

Comparative Analysis

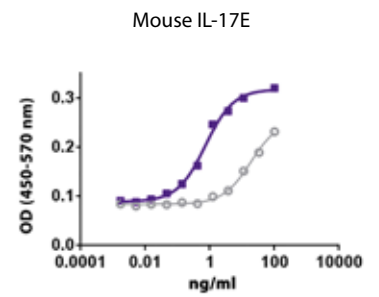
■ BioLegend • Competitor A



HT-2 cell proliferation induced by human IL-2.

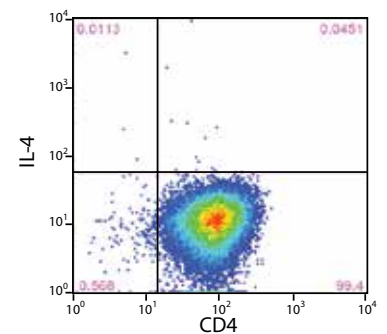
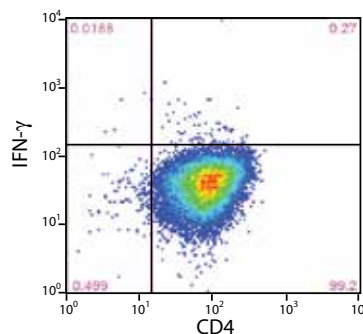
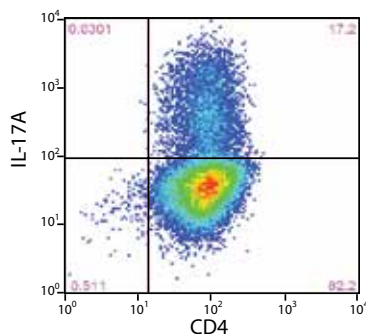


Human TGF- β 1 inhibits the proliferation of mouse HT-2 cells induced by IL-4.



Mouse IL-17E induces CXCL1 production in human HT-29 cells.

Th17 Polarization with BioLegend Recombinant Proteins

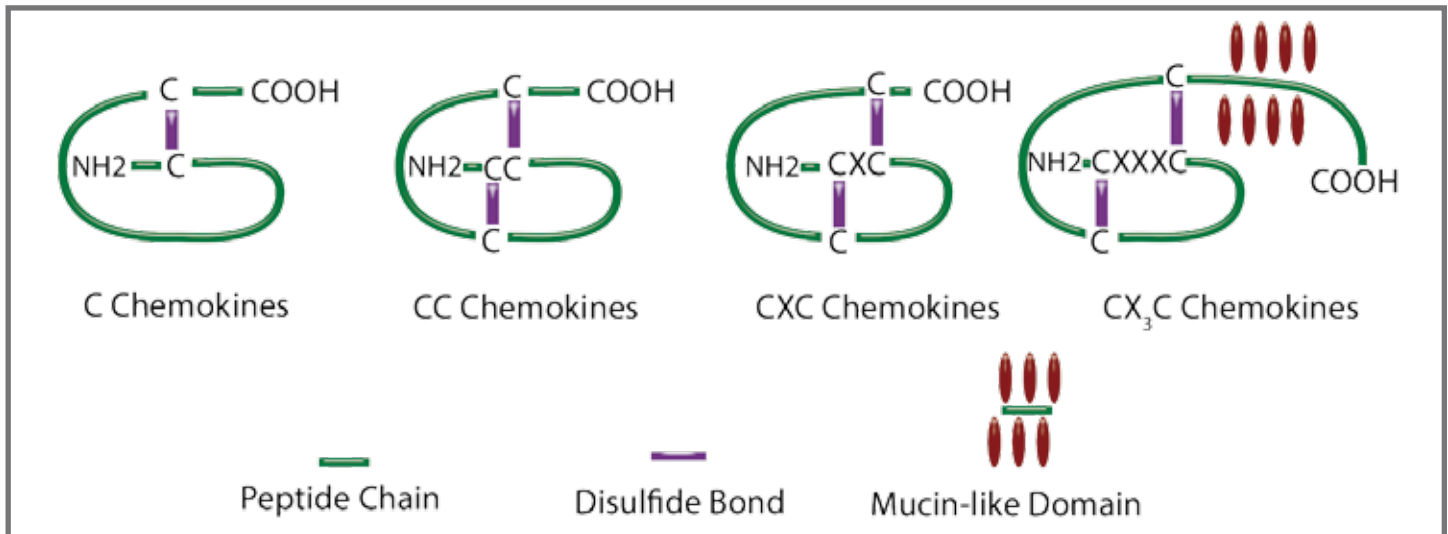


Mouse CD4⁺ T cells were polarized with plate-bound anti-mouse CD3, soluble anti-mouse CD28, recombinant mouse IL-6, IL-23, and TGF- β , anti-mouse IL-4, and anti-mouse IFN- γ for 4 days. After re-stimulation with PMA/ionomycin in the presence of BFA or Monensin, the cells were harvested and surface stained with CD4-FITC, and intracellularly stained with IFN- γ -APC, IL-4-APC, or IL-17-PE.

Chemokines

Chemokines are relatively small cytokines focused on inducing cell movement, or chemotaxis. Chemokines contain several (usually four) cysteines in conserved positions within the protein. These cysteines (marked C in the figure below) provide tertiary structure for the chemokine through disulfide bonds.

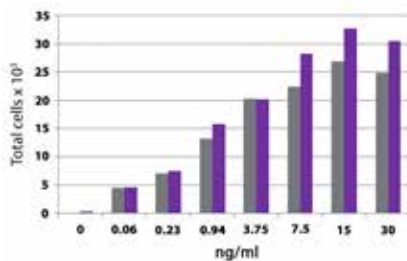
The spacing and intervening amino acid residues (denoted X) between the first two cysteines determine the type of chemokine. Chemokine receptors consist of seven transmembrane-spanning regions and are often promiscuous, binding to multiple ligands.



Comparative Analysis

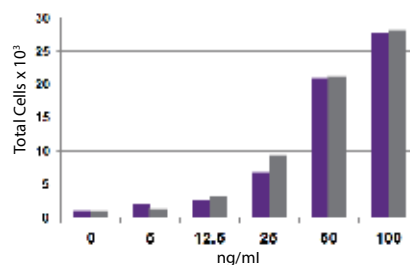
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Mouse CCL2



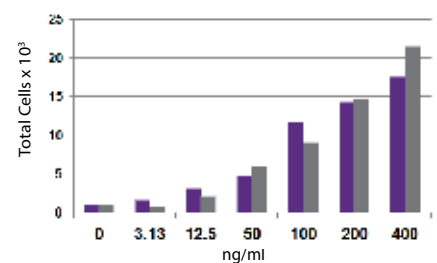
Mouse CCL2 attracts human monocytic THP-1 cells.

Human CCL3



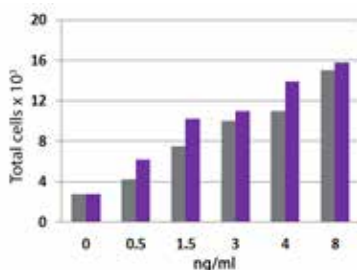
BaF3-hCCR5 transfectants attracted by human CCL3.

Human CCL8



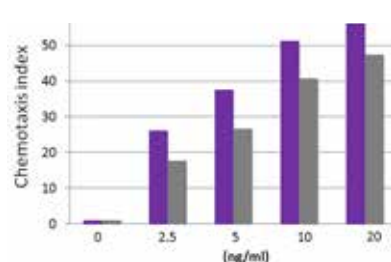
THP-1 cells attracted by human CCL8/MCP-2.

Human CXCL8/IL-8



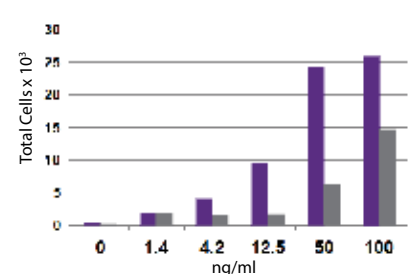
Chemoattraction of human neutrophils by IL-8.

Mouse CCL3



Mouse CCL3 induces chemotaxis of BaF3 mouse pro-B cells transfected with human CCR5.

Human CX3CL1



BaF3-mCX3CR1 transfectants attracted by human CX3CL1.

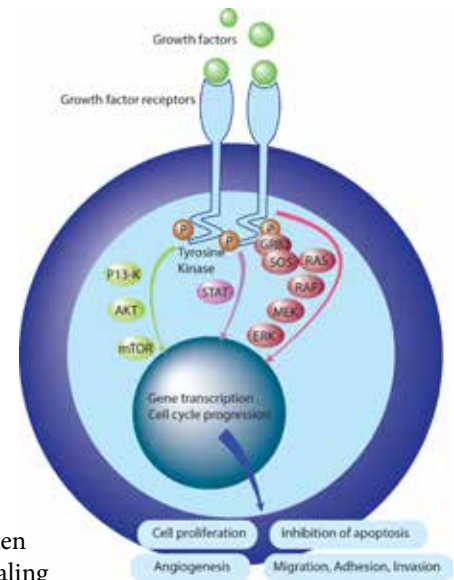
Growth Factors

Growth factors are protein molecules produced by the body that control cell growth, differentiation, and survival. There are many different types of growth factors, and they work in different ways. Some tell cells what they should become (differentiation). Some make cells grow and divide into new cells.

There are a number of different growth factors, and one way to classify them is by the ability of each family to affect specific cell types. Examples include:

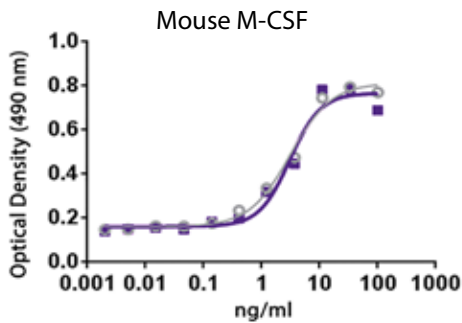
- Epidermal growth factor (EGF) – controls cell growth.
- Vascular endothelial growth factor (VEGF) – controls blood vessel development.
- Platelet derived growth factor (PDGF) – controls blood vessel development and cell growth.
- Fibroblast growth factor (FGF) – controls cell growth.
- Transforming Growth Factor beta (TGF-beta) superfamily – Includes molecules like TGF-beta-1/2/3, Activins, Bone Morphogenetic Proteins (BMPs), Growth Differentiation Factors (GDFs).

The activity of a growth factor is mediated via binding to its transmembrane receptor that often contains a cytoplasmic tyrosine kinase domain. This event initiates various downstream signaling cascades, such as ras-raf-MAP-fos or PI3K-Akt-mTOR pathways, eventually controlling growth and differentiation of the target cell. Typically, growth factors don't act in an autocrine fashion and act locally, due to their short half-lives and slow diffusion through the extracellular matrix.

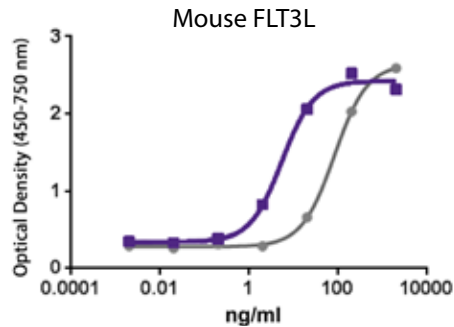


Comparative Analysis

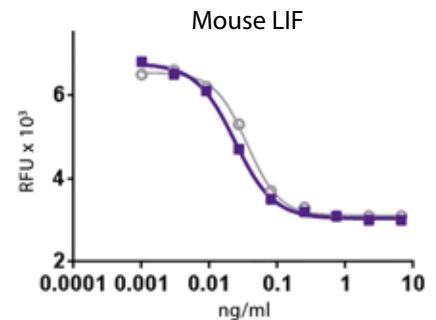
■BioLegend ■Competitor A



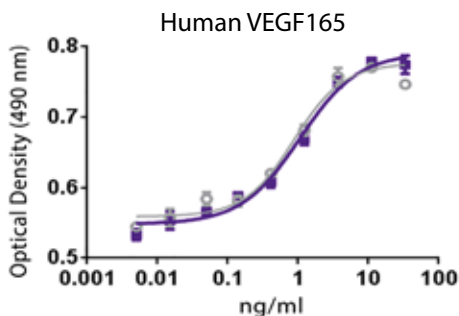
M-NFS60 cell proliferation induced by mouse M-CSF.



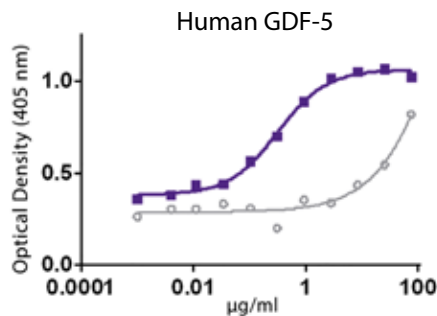
Mouse FLT3L induces IL-6 production in murine leukemia cell line M1 in the presence of mouse LIF recombinant protein.



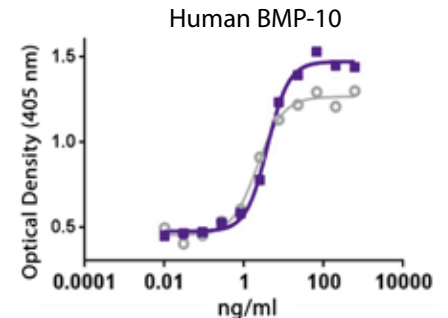
Mouse LIF inhibits the proliferation of mouse myeloid leukemia M1 cells.



Human VEGF165 induces the proliferation of HUVEC cells.



Recombinant human GDF-5 induces the production of alkaline phosphatase in mouse chondrogenic ATDC5 cell line.



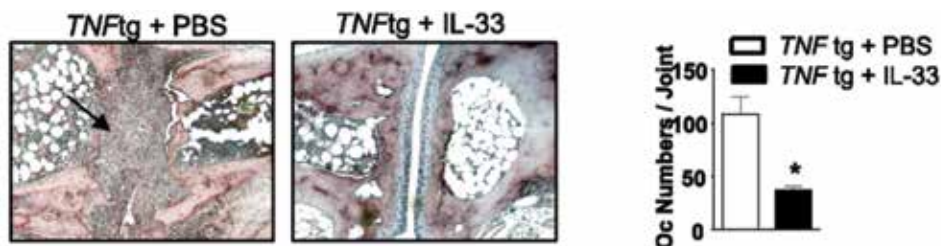
Recombinant human BMP-10 induces alkaline phosphatase production in the mouse chondrogenic cell line ATDC5.

Researcher Spotlight

Dr. George Schett



Photo: Dr. H.E. Langer



Dr. Schett's group injected mice with BioLegend recombinant mouse IL-33 and found that this treatment prevented differentiation of cells into inflammatory osteoclasts (Oc) and bone loss.
Zaiss, M.M. *et al.* 2011. *J. Immunol.* 186:6097.

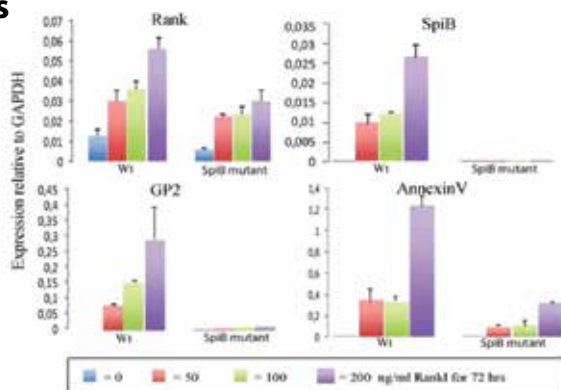
"I am currently the Professor of Internal Medicine and Chairman of the Department of Internal Medicine 3 at the University Erlangen-Nuremberg. My research focuses on basic, translational, and clinical forms of research of several autoimmune diseases. BioLegend's recombinant mouse IL-33 allowed us to analyze its effects on prevention of bone destruction."

-Dr. George Schett, University Erlangen-Nuremberg

Dr. Edward Nieuwenhuis



The Lab of Dr. Edward Nieuwenhuis
(third from the right)



Dr. Nieuwenhuis's group utilized BioLegend recombinant mouse RANKL to stimulate wild-type or SpiB mutant minigut organoid cultures to detect gene expression of RANK, SpiB, GP2, and Annexin V.
de Lau, W., *et al.* 2012. *Mol. Cell. Biol.* 32:3639.

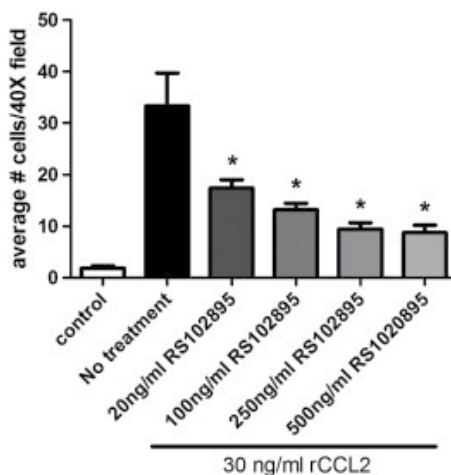
"Our lab of pediatric gastroenterology focuses on the immune system of the gut and different enteropathies. By using BioLegend's recombinant mouse RANKL, we successfully established a culture system for large amounts of M-cells, a rare cell type in the small intestine which plays an important role in immune homeostasis of the gut. This culture system gives us the unique opportunity to further study the differentiation and function of M-cells in health and disease."

-Dr. Edward Nieuwenhuis, University Medical Centre Utrecht

Dr. Steven Dow



Photo: College of Veterinary Medicine & Biomedical Sciences



Dr. Dow's group measured the ability of an antagonistic drug (RS102895) to prevent chemotaxis induced by BioLegend recombinant mouse CCL2.
Mitchell, L.M. *et al.* 2013. *Intl Immunopharmacol.* 15:357.

"Our lab uses BioLegend mouse rCCL2 in monocyte migration assays. These studies are done with Boyden chambers and are used to identify novel compounds or repurposed drugs that can be applied *in vivo* for vaccine enhancement and cancer therapeutics."

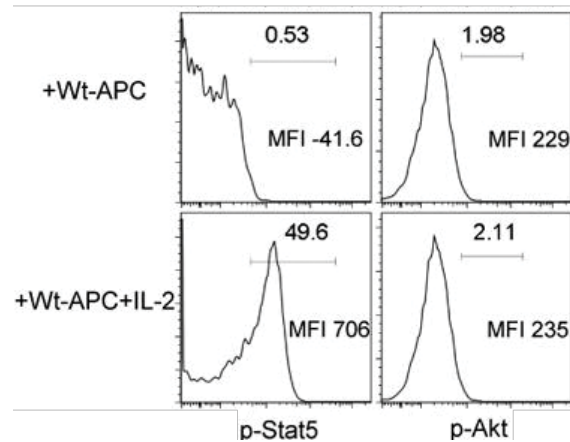
-Dr. Steven Dow, Colorado State University

Researcher Spotlight

Dr. Xian C. Li



Dr. Xian C. Li (Left).



Dr. Li's group stimulated mouse Tregs with BioLegend recombinant mouse IL-2 and measured Stat5 and Akt phosphorylation through flow cytometry. Xiao, X. *et al.* 2012. *J. Immunol.* 188: 892.

"We are interested in IL-2 and IL-15 and how such cytokines regulate different facets of T cells, particularly Tregs and memory T cells. The proteins from BioLegend are instrumental in our endeavor in this area."

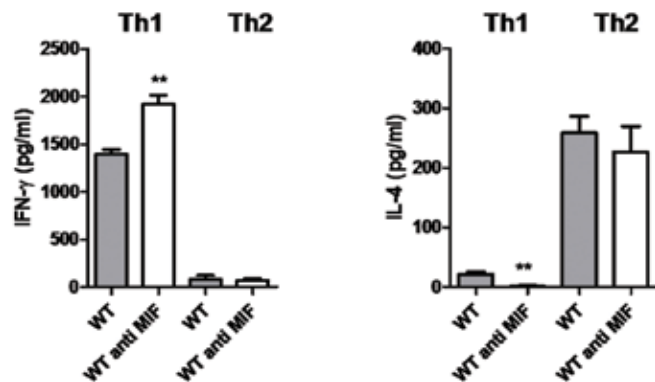
-Dr. Xian C. Li, Harvard Medical School

Dr. Tatiana Scorza



Photo : François L. Delagrave

Dr. Tatiana Scorza (Left)



Dr. Scorza's group tested the effect of neutralization of migration inhibitory factor on production of hallmark Th1 and Th2 cytokines by cells polarized with BioLegend recombinant proteins and antibodies. Malu, D.T. *et al.* 2011. *J. Immunol.* 186:6271.

"Our lab is focused on studying the interaction between malaria parasites and the immune system, particularly the induction of immunosuppressive factors in macrophages following contact with *Plasmodium* or with damaged red blood cells. BioLegend has provided numerous recombinant proteins which have allowed us to explore the mechanism of the host response to malarial infection."

-Dr. Tatiana Scorza, Université du Québec à Montréal

BioLegend Recombinant Proteins (carrier-free)

Interleukins, Interferons, and Growth Factors

Protein	Human	Mouse	Rat
Activin A	592002 592004 592006 592008	-	-
Amphiregulin	-	554102 554104	-
ANG-2	595102 595104	-	-
β-NGF	-	598102 598104	-
B7.1 (CD80)-Fc Chimera	-	555404 555406	-
BAFF	559602 559604 559606	591202	-
Betacellulin	551202 551204	551302 551304 551306 551308	-
BMP-4	595201 595202	595301 595302	-
BMP-5	595401 595402	-	-
BMP-6	595501 595502	-	-
BMP-7	595601 595602	-	-
BMP-9	553102 553104	553202 553204	-
BMP-10	751602 751604 751606 751608	-	-
BMP-13	595802 595804	-	-
BMP-14 (GDF-5)	752302 752304	-	-
Cardiotrophin-1	595901 595902	596001 596002	-
CD14	593002 593004 593006	-	-
CD27L	553404	550404 550406	-
CD30L	-	553602 553604 553606	-
CD40L (TNFSF5)	591702 591704 591706 591708	-	-
CTLA-4-Fc Chimera	591902 591904 591906 591908	591802 591804 591806 591808	-
CNTF	559802 559804 559806 559808	-	-
EGF	585506 585508	585606 585608	558902 558904 558906 558908
EPO	587102 587104 587106 587108	587602 587604 587606 587608	592302 592304 592306 592308
Endostatin	556504 556506	557404 557406 557408	-
Epigen	556404 556406 556408	-	-
Epiregulin	550202 550204 550206 550208	550302 550304 550306 550308	-
FASL (TNFSF6)	589402 589404 589406	-	-
FGF-1-acidic	599202 599204 599206 599208	750902 750904 750906 750908	-
FGF-basic	-	579602 579604 579606 579608	-
FGF-basic/145aa	571502 571504 571506 571508	-	-
FGF-3	558002 558004 558006 558008	-	-
FGF-4	592202 592204 592206 592208	-	-
FGF-6	554202 554204 554206 554208	-	-
FGF-9	558702 558704 558706 558708	-	-
FGF-10	559302 559304 559306 559308	751002 751004 751006 751008	-
FGF-17	556302 556304 556306 556308	751104 751106 751108	-
FGF-21	553802 553804 553806 553808	-	-
FLT3L	550602 550604 550606 550608	550702 550704 550706	-
GASP-1	596102 596104	-	-
Gremlin-1	596202 596204	-	-
G-CSF	578602 578604 578606	574602 574604 574606 574608	-
GM-CSF	572902 572903 572904 572905	576302 576304 576306 576308	592602 592604 592606 592608
HB-EGF	552002 552004	-	-
HGF	596401 596402	-	-
HMGB1	557804	-	-
IFN-α1	-	751802 751804 751806 751808	-
IFN-α2	592702 592704 592706 592708	-	-
IFN-β1	-	581302 581304 581306	-
IFN-γ	570202 570204 570206 570208	575302 575304 575306 575308	598802 598804 598806 598808
IGF-I	590904 590906 590908	591402 591404 591406	590004 590006
IGF-II	590604 590606 590608	588204	-

BioLegend Recombinant Proteins (carrier-free)

Interleukins, Interferons, and Growth Factors

Protein	Human	Mouse	Rat
IGFBP-1	596602 596604	751402 751404	-
IGFBP-2	-	750302 750304	-
IGFBP-3	555602 555604	-	-
IGFBP-4	750602 750604 750606	559902 559904	-
IGFBP-5	-	751202 751204	-
IGFBP-6	751302 751304 751306	-	-
IGF-BP7	555102 555104 555106 555108	-	-
IL-1R	590402 590404 590406 590408	-	-
IL-1RA (IL-1RN)	553902 553904 553906 553908	-	-
IL-1 β	579402 579404 579406 579408	575102 575104 575106 575108	750502 750504 750506 750508
IL-2	589102 589104 589106 589108	575402 575404 575406 575408	579502 579504 579506 579508
IL-3	578002 578004 578006 578008	575502 575504 575506 575508	750202 750204 750206 750208
IL-4	574002 574004 574006 574008	574302 574304 574306 574308	-
IL-5	560701	581502 581504 581506 581508	-
IL-6	570802 570804 570806 570808	575702 575704 575706 575708	598601 598602
IL-6Ra	751502 751504 751506	-	-
IL-7	581902 581904 581906 581908	577802 577804 577806 577808	-
IL-9	594402 594404	556002 556004	-
IL-9, His-tagged	594302 594304 594306 594308	-	-
IL-10	571002 571004 571006 571008	575802 575804 575806 575808	-
IL-10 (Mammalian Expressed)	573202 573204 573206 573208	-	-
IL-11	585902 585904 585906 585908	586002	-
IL-12 p40 Homodimer	-	573102 573104 573106 573108	-
IL-12 (p70)	573002 573004 573006 573008	577002 577004 577006 577008	-
IL-13	571102 571104 571106	575902 575904 575906 575908	751702 751704 751706 751708
IL-15	570302 570304 570306 570308	566301 566302 566304	-
IL-17A	570502 570504 570506 570508	576002 576004 576006 576008	-
IL-17B	596802 596804	-	-
IL-17F	570606	576106 576108	-
IL-17A/F	580602 580604 580606 580608	580802 580804 580806 580808	-
IL-17E (IL-25)	598902 598904	587302 587304 587306	-
IL-21	571202 571204 571206 571208	574502 574504 574506 574508	-
IL-22	571302 571304 571306 571308	576202 576204 576206 576208	-
IL-23	574102	589002 589004 589006 589008	-
IL-27	589202 589204	577402 577404 577406 577408	-
IL-32 α	551002 551004 551006 551008	-	-
IL-33	581802 581804 581806 581808	580502 580504 580506 580508	-
IL-34	577902 577904 577906	577602 577604 577606 577608	-
IL-36 α	551602 551604 551606 551608	555902 555904 555906 555908	-
IL-36 β	-	554502 554504 554506 554508	-
IL-36 γ	-	552802 552804 552806 552808	-
Isthmin-1	-	577502	-
LDLR	555304 555306	553304 553306	-
LIF	593902 593904 593906 593908	554002 554004 554006 554008	-
LIGHT (TNFSF14)	-	557604	-
M-CSF	574802 574804 574806 574808	576402 576404 576406 576408	556902 556904 556906 556908
MIF	599404 599406 599408	599504 599506	-
NNT-1 (BCSF-3)	596901 596902	-	-

BioLegend Recombinant Proteins (carrier-free)

Interleukins, Interferons, and Growth Factors

Protein	Human	Mouse	Rat
NRG1 (Heregulin) EGF Domain	551904 551906	-	-
NRG1α	559502 559504	-	-
Noggin	597002 597004	597102 597104	-
NT-3	598201 598202	-	-
NT-4	598301 598302	-	-
Oncostatin M	555202 555204 555206 555208	-	-
OX40L	555704 555706	-	-
PDGF-BB	577302 577304 577306 577308	558802 558804 558806 558808	-
Persephin	-	598402 598404	-
PLGF-1	590702 590704 590706 590708	-	-
Prolactin	559004 559006	-	-
SCF	573902 573904 573906 573908	579702 579704 579706 579708	-
Sonic Hedgehog	597202 597204	-	-
TACI-Fc Chimera	-	577702 577704 577706 577708	-
TGF-α	589902 589904 589906	-	-
TGF-β1*	580702 580704 580706	-	-
TGF-β2*	583301	-	-
TGF-β3*	585802	-	-
Thrombopoietin (TPO)	597401 597402	593302 593304 593306	598501 598502
TNF-α	570102 570104 570106 570108	575202 575204 575206 575208	580102 580104 580106 580108
TNF-β (LT-α)	562603 562604	-	-
TNFSF9 (4-1BBL)	750002 750004 750006	-	-
TNFSF15	556202 556204 556206 556208	-	-
TNFSF18 (GITRL)	559202 559204 559206	-	-
TRANCE (RANKL)	591102 591104 591106 591108	577102	-
TWEAK (CD255)	566402 566404	-	-
TSLP	582402 582404 582406 582408	-	-
VEGF-120	-	580902 580904 580906 580908	-
VEGF-121	583202 583204 583206 583208	-	-
VEGF-164	-	583102 583104 583106 583108	556802 556804 556806 556808
VEGF-165	583702 583704 583706 583708	-	-
VEGF-C	589702 589704 589706	-	-
Visfatin	597602 597604	-	-
WISP-1	597702 597704	-	-
WNT-7a	597901 597902	-	-

*Also cross-reactive against mouse

Recombinant proteins for use as ELISA standards can be found at: www.oyzme.fr/elisa

BioLegend Recombinant Proteins (carrier-free)

Chemokines

Protein	Human	Mouse	Rat
CCL1 (I-309)	582702 582704 582706 582708	584802	-
CCL2 (MCP-1)	571402 571404 571406 571408	578402 578404 578406	-
CCL3 (MIP-1α)	582802 582804 582806	593802 593804	-
CCL4 (MIP-1β)	554702 554704 554706	554602 554604 554606	-
CCL5 (RANTES)	580202 580204 580206 580208	594202 594204 594206 594208	-
CCL7 (MCP-3)	585702 585704 585706	586102 586104 586106 586108	-
CCL8 (MCP-2)	581602 581604 581606 581608	581702 581704 581706 581708	-
CCL9 (MIP-1γ)	-	586202 586204 586206 586208	-
CCL11 (Eotaxin)	583002 583004 583006 583008	582902 582904 582906 582908	-
CCL12 (MCP-5)	-	587902 587904 587906 587908	-
CCL13 (MCP-4)	587502 587504 587506 587508	-	-
CCL14 (HCC-1)	587202 587204 587206 587208	-	-
CCL15 (MIP-1δ)	587402 587404 587406 587408	-	-
CCL17 (TARC)	573802 573804 573806 573808	581402 581404 581406 581408	-
CCL19 (MIP-3β)	582102 582104 582106 582108	587802 587804 587806	-
CCL20 (MIP-3α)	583802 583804	582302 582304 582306 582308	590102 590104
CCL21 (6CKine)	582202 582204 582206 582208	586402 586404 586406 586408	-
CCL22 (MDC)	584902 584904	582602 582604	-
CCL23 (MPIF-1) (Arg22-Ans120)	586902 586904 586906 586908	-	-
CCL23 (MPIF-1) (Arg46-Ans120)	587002 587004 587006 587008	-	-
CCL24 (Eotaxin-2)	585002 585004 585006 585008	585102 585104 585106 585108	-
CCL25 (TECK)	586802 586804 586806 586808	589302 589304 589306 589308	-
CCL26 (Eotaxin-3)	585202 585204 585206 585208	-	-
CCL27 (CTACK)	583602 583604 583606	-	-
CCL28 (MEC)	584602 584604 584606 584608	584702 584704 584706 584708	-
CXCL1 (GRO-α)	574402 574404 574406 574408	573702 573704 573706 573708	-
CXCL2 (GRO-β)	582002 582004 582006 582008	582502 582504 582506 582508	-
CXCL3 (GRO-γ)	586302 586304 586306 586308	590802 590804 590806 590808	-
CXCL4 (PF-4)	550904 550906	590202 590204 590206 590208	-
CXCL5 (ENA-78)	573402 573404 573406 573408	-	-
CXCL6 (GCP2)	586502 586504 586506	*573302 573304 573306 573308	-
CXCL7 (NAP-2)	586602 586604	586702 586704	-
CXCL8 (IL-8)	574202 574204 574206 574208	-	-
CXCL9 (MIG)	578102 578104 578106 578108	578202 578204 578206 578208	-
CXCL10 (IP-10)	573502 573504 573506 573508	573602 573604	-
CXCL11 (ITAC)	574902 574904 574906 574908	578302 578304 578306 578308	-
CXCL12 (SDF-1α)	581202 581204 581206 581208	578702 578704 578706 578708	-
CXCL12 (SDF-1β)	587702 587704 587706 587708	589802 589804 589806 589808	-
CXCL13 (BLC)	574702 574704 574706 574708	583902 583904 583906 583908	-
CXCL14 (BRAK)	589602 589604 589606	589502 589504 589506	-
CXCL16	591002 591004 591006 591008	-	-
CXCL17 (VCC-1)	585302 585304 585306 585308	585402 585404 585406 585408	-
CX3CL1	583402 583404 583406 583408	583502 583504 583506 583508	590302 590304 590306 590308

‡Mouse Cxcl5 is the ortholog of human CXCL6

BioLegend Recombinant Proteins (carrier-free)

Proteases and other Enzymes

Protein	Human	Mouse
Aggrecan (G1-IGD-G2)	551404 551406	-
Arginase I	552502 552504 552506 552508	-
Cathepsin B	557702 557704 557706 557708	-
Cathepsin D	556702 556704 556706 556708	-
Cathepsin E	599302 599304	-
GALNT2	750402 750404	-
Granzyme A	550802 550804	-
Granzyme B	554902 554904	554802 554804
MMP-1	592902 592904 592906 592908	-
MMP-2	554302 554304 554306 554308	554402 554404
MMP-3	594702 594704 594706 594708	552702 552704 552706 552708
MMP-8	556102 556104 556106	-
MMP-9	550502 550504 550506	590502
MMP-9 (dimer)	551102 551104 551106	-
PCSK9	592502 592504 592506 592508	555502 555504 555506
Serpin F1 (PEDF)	559102 559104 559106	-
ST8SIA1	750802 750804 750806	-
TIMP-1	592402 592404 592406 592408	-
TIMP-2	593602 593604 593606 593608	-
TFPI-2	558202 558204 558206	-
VAP-1	597501 597502	-

Adhesion Molecules and Receptors

Protein	Human	Mouse
APCS (PTX2)	556602 556604 556606	-
B7-H2-Fc Chimera	599902 599904 599906	-
CLEC2-Fc Chimera	-	551804 551806
Clusterin	750702 750704 750706	-
CRP	557002 557004 557006	-
FAS (TNFRSF6)-Fc Chimera	555002 555004 555006 555008	-
Galectin-1	553504 553506	-
Galectin 3	599704 599706	599804 599806
Galectin-9	557302 557304 557306	-
GM-CSFRα	594106 594108	-
HVEM-Fc Chimera	596504 596506	-
ICAM-1-Fc Chimera	552904 552906	553004 553006
ICOS-Fc Chimera	599002 599004 599006	599102 599104 599106
IL-1RL1 (ST2)-Fc Chimera	557904 557906 557908	-
IL-2Rα	550104 550106	550004 550006
Mesothelin	593202 593204 593206	594002 594004 594006 594008
NGAL (Lipocalin-2)	588102 588104 588106 588108	588002 588004 588006 588008
NTRK2 (TrkB)	557502 557504 557506	-
Osteopontin	557102 557104 557106	-
PLAUR (uPAR)	559702 559704 559706	-
Podoplanin-Fc Chimera	-	551704 551706
RANK (TNFRSF11A)	559404 559406	-
Siglec 3-Fc Chimera	750104 750106	-
Siglec 5-Fc Chimera	557204 557206	-
Siglec E-Fc Chimera	-	551504 551506
sTNF-RI (TNFRSF1A)	591502 591504 591506 591508	-
sTNF-RII (TNFRSF1B)	591602 591604 591606 591608	-
TLR3	597302 597304	-
TNFRSF11B (OPG)-Fc Chimera	-	552602 552604
VCAM-1-Fc Chimera	553704 553706	-
VEGFR1	555802 555804	-
VEGFR2-Fc Chimera	595002 595004 595006	552202 552204 552206
VEGFR3-Fc Chimera	599602 599604 599606	-

Animal-Free Recombinant Proteins

BioLegend is proud to release our line of animal-free recombinant proteins, which greatly minimize the variables and potential contamination of mammalian pathogens during the production process. All of these proteins are produced in animal-free media, and the purification equipment itself is also animal component free. The animal-free versions of these proteins function in a similar manner to their animal-derived counterparts. Treat your cells to animal-free recombinant proteins and see how they prosper!



Human

Description	Cat. No.	Size
Activin A	718502	10 µg
β-NGF	711906	100 µg
BMP-4	710002	10 µg
CCL2 (MCP-1)	716504	20 µg
CCL5 (RANTES)	717004	20 µg
sCD40L	712904	50 µg
CNTF	710104	20 µg
EGF	713008	500 µg
FGF-1-acidic	710204	50 µg
FGF-basic (146 aa)	713304	50 µg
FGF-basic (154 aa)	710304	50 µg
FGF-4	710404	25 µg
FGF-8	710504	25 µg
FGF-9	710604	20 µg
FGF-10	710704	25 µg
Flt-3 Ligand	710802	10 µg
G-CSF	713402	10 µg
GDF-3	710904	20 µg
GDNF	711002	10 µg
GM-CSF	713604	20 µg
Heregulin-β1	711104	50 µg
IFN-γ	713906	100 µg
IFN-λ 1	711204	20 µg
IGF-I	711308	500 µg
IGF-II	714104	50 µg
IL-1RA	714406	100 µg
IL-3	714702	10 µg
IL-4	714904	20 µg
IL-6	715104	20 µg
IL-7	715302	10 µg
IL-8	715404	25 µg
IL-9	715502	10 µg
IL-10	715602	10 µg
IL-11	715702	10 µg
IL-15	715902	10 µg
IL-16	711402	10 µg
IL-17A	716004	25 µg
IL-17E	711504	25 µg

Description	Cat. No.	Size
IL-21	716102	10 µg
IL-22	716202	10 µg
IL-33	716302	10 µg
IL-36γ	711602	10 µg
KGF (FGF-7)	711702	10 µg
LIF	716404	25 µg
M-CSF	716602	10 µg
NT-3	712102	10 µg
NT-4	712202	10 µg
Oncostatin M	712302	10 µg
PDGF-AA	712402	10 µg
PLGF-1	716904	25 µg
Thrombopoietin (TPO)	712602	10 µg
TRANCE	717502	10 µg
TGF-α	717602	100 µg
TNF-α	717904	50 µg
TWEAK	712804	25 µg
VEGF-165	718302	10 µg

Mouse

Description	Cat. No.	Size
EGF	713108	500 µg
FGF-basic	713204	50 µg
G-CSF	713502	10 µg
GM-CSF	713704	20 µg
IFN-γ	714006	100 µg
IL-2	714604	20 µg
IL-3	714802	10 µg
IL-4	715004	20 µg
IL-6	715202	10 µg
Noggin	712004	20 µg
Thrombopoietin (TPO)	718102	10 µg
TNF-α	718004	20 µg
VEGF-164	718402	10 µg

Rat

Description	Cat. No.	Size
GM-CSF	713804	20 µg
M-CSF	711802	10 µg
SCF	712502	10 µg
Thrombopoietin (TPO)	712702	10 µg

Frequently Asked Questions

How does the activity of your recombinant proteins compare to competitors?

We quality control each and every lot of recombinant protein. Not only do we check its bioactivity, but we also compare it against other commercially available recombinant proteins. We make sure each recombinant protein's activity is at least as good as or better than the competitor's. In order to provide you with the best possible product, we ensure that our testing process is rigorous and thorough. If you're curious and eager to make the switch to BioLegend recombinants, contact sales@biolegend.com today!

What is the difference between the carrier-free and the non carrier-free recombinant proteins?

Carrier-free recombinant proteins do not have any additional protein, while non carrier-free recombinant proteins do. The carrier-free format provides flexibility for the customer. When the presence of carrier is not desirable (e.g., *in vivo* applications), carrier-free proteins can be used directly. When carrier proteins do not affect the outcome in a study, the customer can decide what type of carrier protein they would like to use and whether it is necessary to add it to their stock.

How are BioLegend's carrier-free recombinant proteins shipped?

Our carrier-free recombinant proteins are shipped on blue ice. These products have been validated to maintain activity after shipping using blue ice.

What is the specific activity or ED50 of my recombinant protein?

The specific activity of every lot meets our in-house bioassay QC specifications. If you need the exact specific activity or ED50 of a particular lot, please contact tech@biolegend.com today to find out. Please have the lot number ready (it is written on the vial label and starts with B).

What should I reconstitute the protein with? What do you recommend for its long-term storage?

Our recombinant proteins are shipped in liquid form, so there is no need for reconstitution. If you need to make dilutions, refer to the formulation on the product data sheet. Stock solutions should be prepared at 50-100 µg/mL in buffer containing carrier protein such as 1% BSA or HSA or 10% FBS (for chemokines, use either BSA or HSA). For long-term storage, aliquot into polypropylene vials and store in a manual defrost freezer. Avoid repeated freeze/thaw cycles.

What is the difference between carrier-free and animal-free categories of recombinant proteins?

Our animal-free products go through the entire production process without touching any animal-containing components. This includes using animal-free media and purification equipment. Studies which are particularly sensitive to contamination by mammalian pathogens may require the use of animal-free products. Our carrier-free products do not contain any carrier protein, but they are produced using animal-containing components. Both versions are expected to have similar activity and function, though specific activity is lot-dependent.



References Using BioLegend Recombinant Proteins

Human

CXCL10

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GM-CSF

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IL-2

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IL-4

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IL-22

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M-CSF

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PDGF-BB

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TGF-β

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VEGF-165

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Rat

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Mouse

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TRANCE (RANKL)

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Nous contacter